

# Construction of an Economic Sentiment Indicator for the Korean Economy

Hyejung Moon<sup>1</sup>

<sup>1</sup>Economic Statistics Department, The Bank of Korea

(Received May 2011; accepted August 2011)

---

## Abstract

An Economic Sentiment Indicator(ESI) is a composite indicator of business survey indices(BSI) and consumer survey indices(CSI). The ESI designed to reflect economic agents' (this includes producers and consumers) overall perceptions of economic activity in a one-dimensional index. The European Commission has published an ESI since 1985. This paper demonstrates the construction of an ESI for the Korean economy. The BSI and CSI components (having a high correlation and a leading feature with respect to GDP) are selected to construct the ESI and they are aggregated using a weighted average and then scaled to have a long-term average of 100 and a standard deviation of 10. Thus values greater than 100 indicate an above-average economic sentiment and vice versa. The newly constructed Korean ESI that extends to January 2003 shows a good tracking performance of GDP and adequately reflects the overall perception of economic activity.

**Keywords:** Economic Sentiment Indicator(ESI), business survey index(BSI), consumer survey index(CSI), gross domestic product(GDP).

---

## 1. Introduction

Business and consumer surveys examine economic agents' opinions about past, current, and future economic activity. The main advantages of business and consumer survey data are timeliness and high frequency. The survey data have an informational lead because the data are available ahead of hard economic data like gross domestic product(GDP) and industrial production that are usually published with delays of 2 or 3 months. In addition, the survey data are generally available at monthly frequencies and hence are suitable for reflecting volatile economic developments. Therefore, the survey data are widely used to assess the current state of the economy and forecast short-term economic developments as a key complement to quantitative statistics.

Business surveys of corporations cover the perceptions of producers, while consumer surveys of households reflect the opinions of consumers. In Korea, business surveys are conducted by the Bank of Korea(BOK), the Federation of Korean Industries(FKI), and other economic organizations, from which business survey indices(BSI) are published. Consumer survey indices(CSI) are released by organizations such as the BOK, Statistics Korea(SK), and research institutes. The BSI and CSI

---

<sup>1</sup>Statistician, Economic Statistics Department, The Bank of Korea, 110, 3-Ga, Namdaemum-Ro, Jung-Gu, Seoul 100-794, Korea. E-mail: [hjmoon@bok.or.kr](mailto:hjmoon@bok.or.kr)

data consist of the multiple component series that concern diverse facets of economic activity in different sectors of the economy.

The demand to incorporate most of the information contained in multiple indicators into a single indicator has led to the construction of a composite indicator. The single composite indicator is useful to reflect the economic agents' overall perceptions of economic activity. The European Commission(EC) has calculated an Economic Sentiment Indicator(ESI) since 1985 based on the Joint Harmonised Programme of Business and Consumer Surveys. The EC constructs the ESI using the weighted average of the 15 individual component series that belong to 5 sectors: industry (40%), services (30%), construction (20%), retail trade (5%), and consumers (5%). In particular, these component series are first standardized, aggregated using the above weights, and then scaled to have a mean of 100 and a standard deviation of 10. The weights of the EC are determined based on the "representativeness" of the corresponding sector in the total economy and "tracking performance" in relation to the reference variable, GDP growth. The EC has also published confidence indicators for each of the 5 sectors. The ESI is calculated at the EU and the euro-area level using country weights as well as at the individual EU member state level (see European Commission (1997, 2007) for a detailed description).

Another useful aggregation method is to use the dynamic factor model as described in Stock and Watson (2002). Bruno and Malgarini (2002) constructed a composite confidence indicator for the Italian economy by extracting a "common factor" by means of the dynamic factor model. Gayer and Genet (2006) used factor models to construct composite indicators and then compared them with the EC confidence indicators. Gelper and Croux (2007) compared the predictive power of the EC's ESI with that of the composite indicator constructed, based on statistical methods such as dynamic factor analysis and partial least squares. All of these methods are alike in that they construct a composite indicator by a linear combination of the component series; however, they show differences in the weighting scheme.

This paper instructs an ESI that adequately explains the Korean economy. To this end, this paper uses empirical studies to select informative components among all the BSI and CSI data and find the optimal weighting structure. This paper is organized as follows. Section 2 describes the process of constructing the ESI. Section 3 evaluates the performance of the ESI computed for the Korean economy and compares it with other economic indicators. Section 4 discusses the main findings and offers suggestions for further research.

## **2. Construction of an ESI**

### **2.1. Data description**

To construct the Korean ESI, the monthly BSI and CSI data from 2003 to 2009 published by the BOK are used exclusively. The monthly BSI data of the BOK are available from 2003. On the other hand, the monthly CSI data of the BOK are available only from July 2008 when the BOK changed the periodicity of the consumer survey from quarterly to monthly, when SK transferred the compilation of the CSI to the BOK. Accordingly, the monthly CSI data from January 2003 to June 2008 are estimated by temporal disaggregation, which is a process of deriving high frequency data from low frequency data. For the CSI components that exist in the BOK and SK surveys, the monthly data are estimated so that the disaggregated series from the quarterly data of the BOK follow the movements of the monthly data of SK considered as a reference indicator. For